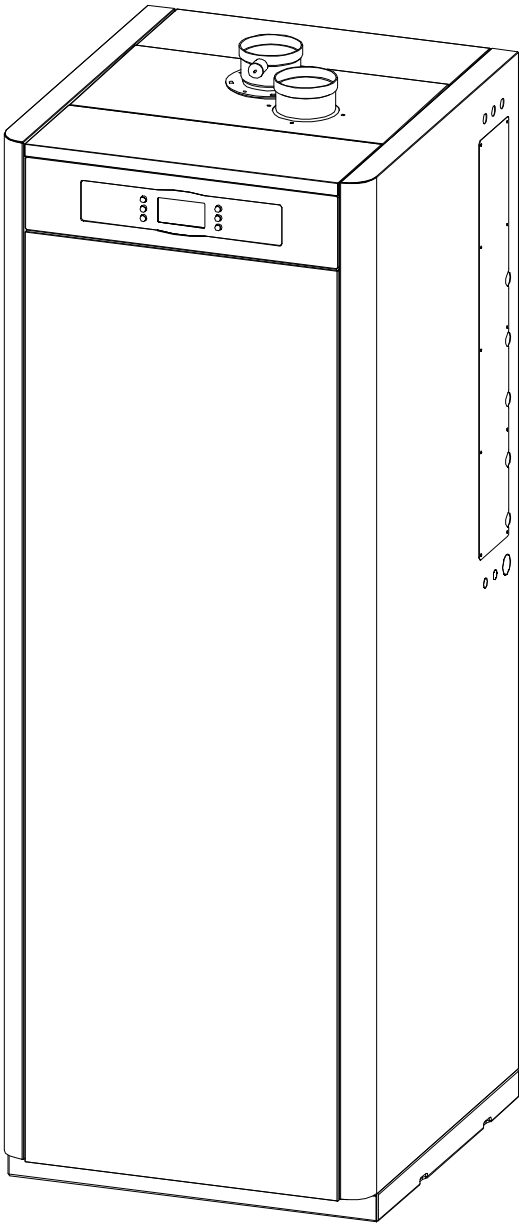
OPERATION USER GUIDE

↪ AVANTTIA NG



DOMUSA TEKNIK

Thank you for choosing a DOMUSA TEKNIK heating boiler. You have chosen the **Avantia NG** model from the **DOMUSA TEKNIK** product line. With a suitable hydraulic installation, this gas-fired boiler will provide the ideal level of comfort for your home. You will also be able to enjoy a balanced, economical supply of domestic hot water.

This document constitutes an essential part of the product and must be delivered to the end user. Please carefully read the warnings and advice contained in this manual, as they provide important information regarding the safety of the installation, as well as use and maintenance.

These boilers must be installed by qualified personnel only, in accordance with the legislation in force and following the manufacturer's instructions.

Start-up of these boilers and any maintenance operations must only be carried out by DOMUSA TEKNIK's Authorised Technical Assistance Services..

This device can be used by children aged 8 years and above and people with reduced physical, sensory or mental abilities or without experience and knowledge, provided that they have been given appropriate supervision or training regarding the use of the device in a safe manner and that they understand the dangers involved. Children should not play with the device. Cleaning and maintenance should be carried out by the user should not be carried out by children without supervision.

Incorrect installation of these boilers could result in damage to people, animals or property, and the manufacturer will hold no liability in such cases.

DOMUSA TEKNIK, in compliance with item 1 of the first additional provision of Act 11/1997, hereby informs that the person in charge of delivering the container waste or used container, for its correct environmental management, will be the final holder of the product (Article 18.1 of Royal Decree 782/1998). At the end of its useful life, the product must be taken to a selected collection point for electrical and electronic equipment or must be returned to the distributor at the time of purchasing a new equivalent appliance. For more detailed information on the collection diagrams available, please contact either the collection facilities of the local authority or the distributor where the purchase was made.

CONTENTS **Page**

1 SAFETY WARNING

1.1 Safety symbols

All safety messages indicate a potential risk of breakdown or damage. Follow the instructions carefully to prevent accident or damage.

DANGER

This symbol warns of operations or situations involving imminent danger and which could cause severe damage or even death if they are not avoided.

WARNING

This symbol is for warnings that must be taken into account for correct use of the appliance and to prevent malfunctioning that could give rise to hazardous situations for the appliance itself and for persons.

CAUTION

This symbol warns of operations or situations involving imminent danger which could cause slight or moderate damage if they are not avoided.

1.2 Other symbols

The following symbols are used in the instructions to draw your attention to important information.

Important **This indicates a risk of damage due to breakdown and damage to persons and/or property.**

Note **This indicates important additional information connected with correct boiler functioning.**

1.3 Safety warnings

DANGER

A gas leak could give rise to explosion with serious consequences, causing material and personal damage. If you smell gas::

Do not smoke in the hazard area. Do not light any flames or sparks.

Do not turn on any switches or electrical appliances.

Open doors and windows.

Turn off the main gas valve.

Switch off the heating.

Keep all persons away from the hazard area.

Follow the safety instructions provided by your gas supplier. These are posted beside the gas meter.

Notify your gas supplier.

DANGER

Breathing in combustion gases (flue gases) can cause serious damage to health by poisoning.

Switch off the heating.

Ventilate the room.

Close all doors to prevent the gas from reaching other rooms.

Do not switch on any switches or electrical appliances.

DANGER

Do not remove or try to access to any components sealed inside the boiler

All the maintenance work of the boiler must be done by personnel authorised by **DOMUSA TEKNIK**.

CAUTION

While working on the heating system

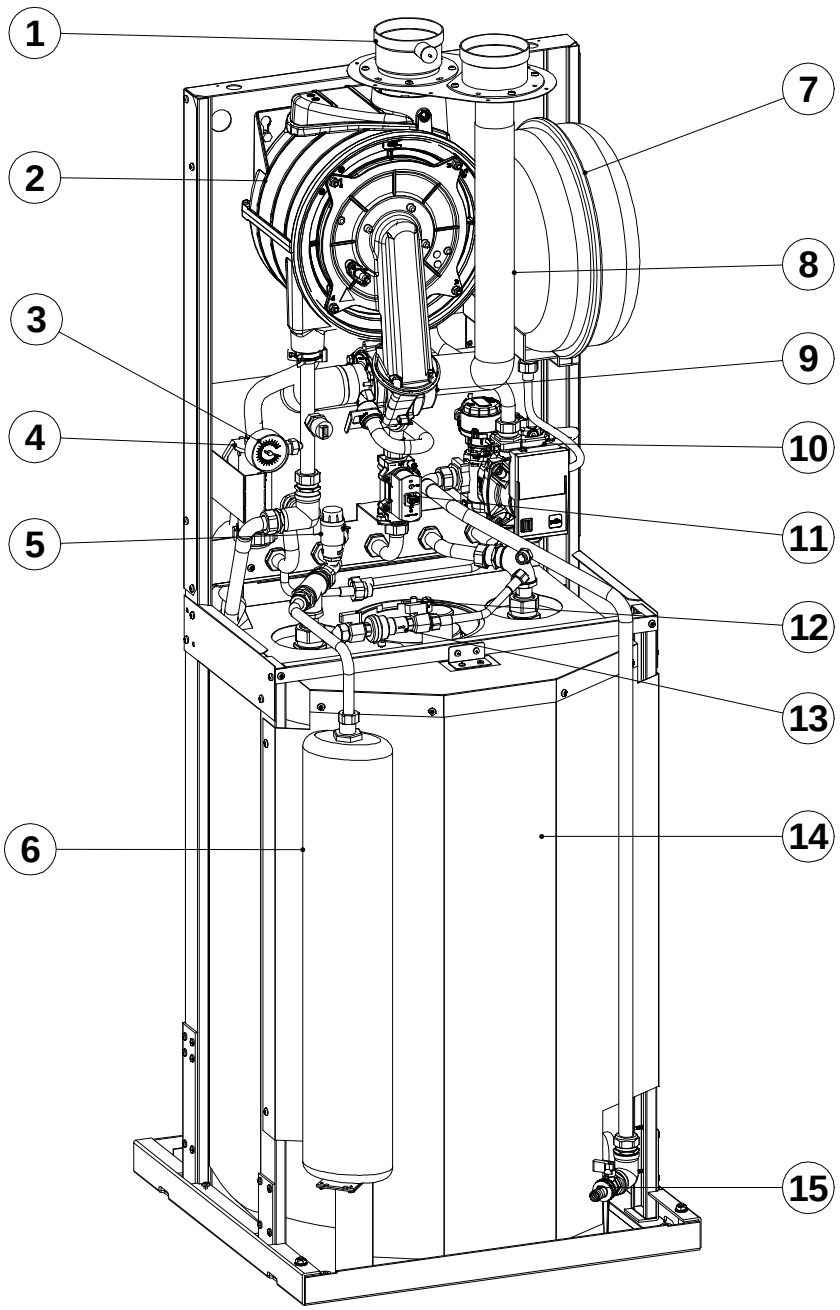
Make sure the boiler has been disconnected from the mains supply. To do this, you may separate or remove the fuses or cut off the mains supply, firstly checking that the boiler is not still switched on.

Cut off the gas flow and make sure it is not restored until you give authorisation.

For propane boilers

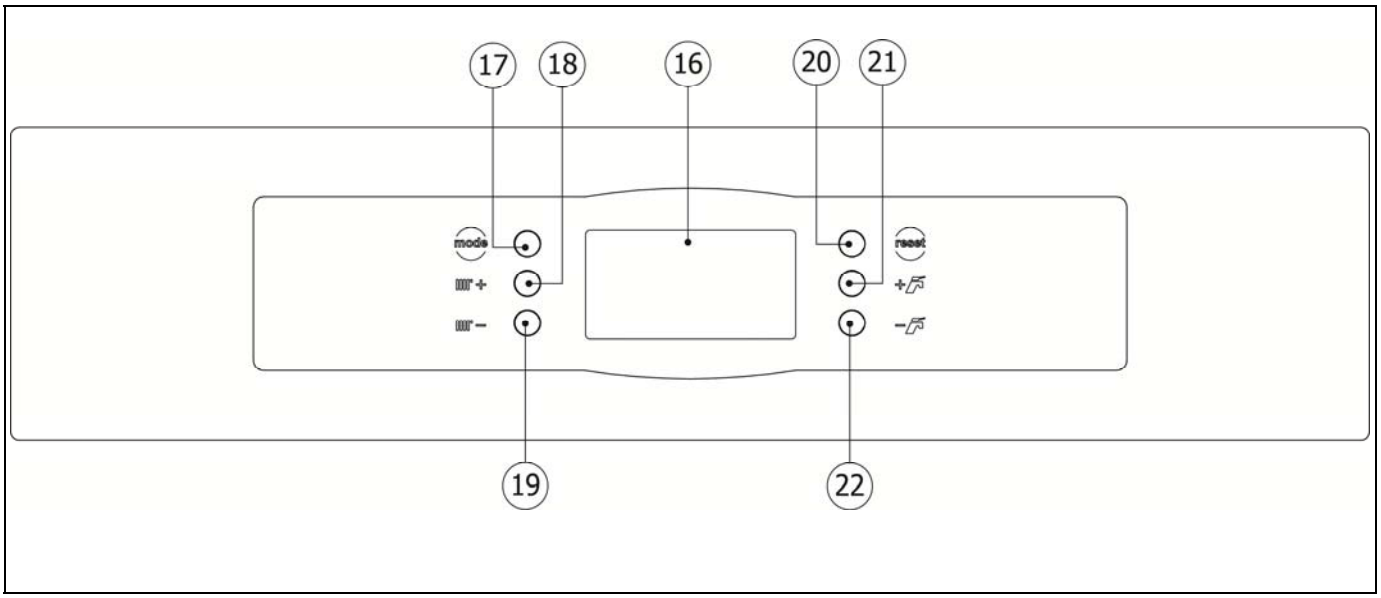
Before installing the boiler, you must be sure that the gas tank has been drained. As a rule, the propane supplier is responsible for suitably draining the air from the tank. You may have problems switching on the boiler if the tank has not been suitably drained. In such cases, firstly contact the person responsible for filling the tank.

2 LIST OF COMPONENTS



1. Flue gas outlet
2. Combustion chamber
3. Primary manometer
4. Condensate siphon
5. DHW safety valve
6. DHW expansion vessel
7. Heating expansion vessel
8. Air inlet
9. Fan
10. Hydraulic unit
11. Gas valve
12. Drain valve
13. Filling disconnector
14. Stainless steel DHW tank
15. Primary drain valve

3 CONTROL COMPONENTS



16. Digital Display

This is the main boiler functioning display, on which all the operating information, settings and values appear.

17. MODE button

This button selects between the different operating modes. It is also used to disable the hot water function.

18. Button for increasing the boiler temperature setpoint (+)

It is used to increase the desired boiler temperature.

19. Button for reducing the boiler temperature setpoint (−)

It is used to decrease the desired boiler temperature.

20. RESET button

When the boiler is in lock-out mode, the **RESET** button is pressed to reset the lock-out and restore "Standard" operation. When modifying any of the parameters, press the **RESET** button to complete the screen cycle and save the changes.

21. Button for increasing DHW temperature (+)

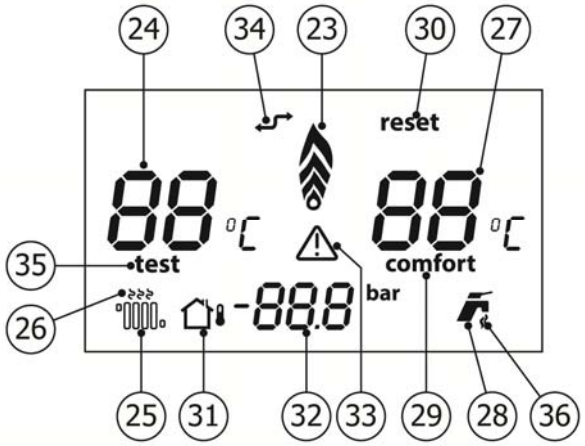
It is used to increase the desired Domestic Hot Water setpoint temperature.

22. Button for reducing DHW temperature (−)

It is used to reduce the desired Domestic Hot Water setpoint temperature.

3.1 Digital Display

The **Avanttia NG** boiler is electronic and has a display for viewing the different boiler settings. The display has various display areas where different icons and numbers appear to indicate the different statuses of the boiler.



23. Flame display

Shows the flame detection and the power at which the boiler is operating.

24. Boiler temperature

It displays the boiler temperature.

25. Heating mode oepration display

It indicates that the heating mode is activated.

26. Heating demand display

It flashes when there is heating demand.

27. DHW temperature

It displays the DHW temperature.

28. DHW mode operation display

It indicates that the DHW mode is activated.

29. Comfort mode operation display

It indicates that the comfort mode is activated.

30. Reset request display

It is displayed when the boiler needs to be reset.

31. External temperature sensor connection display

It is displayed when there is an external sensor connector.

32. Digital manometer

It displays the heating circuit pressure.

33. Error display

It is displayed when an error occurs in the boiler.

34. OT connection display

It is displayed when there is an auxiliary OT input connected.

35. Test mode operation display

It indicates that the test mode is activated.

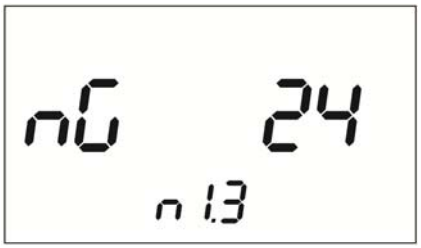
36. DHW demand display

It flashes when there is DHW demand.

4 OPERATION

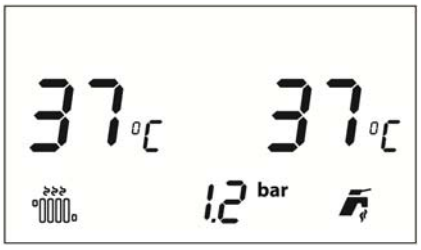
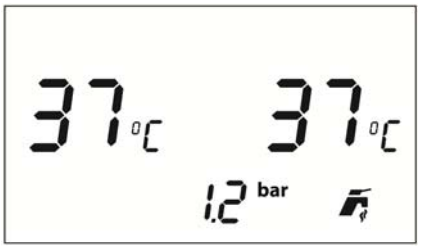
4.1 Switching on the boiler

Once the power cable is connected to the power supply, the Digital Display (32) will light up.

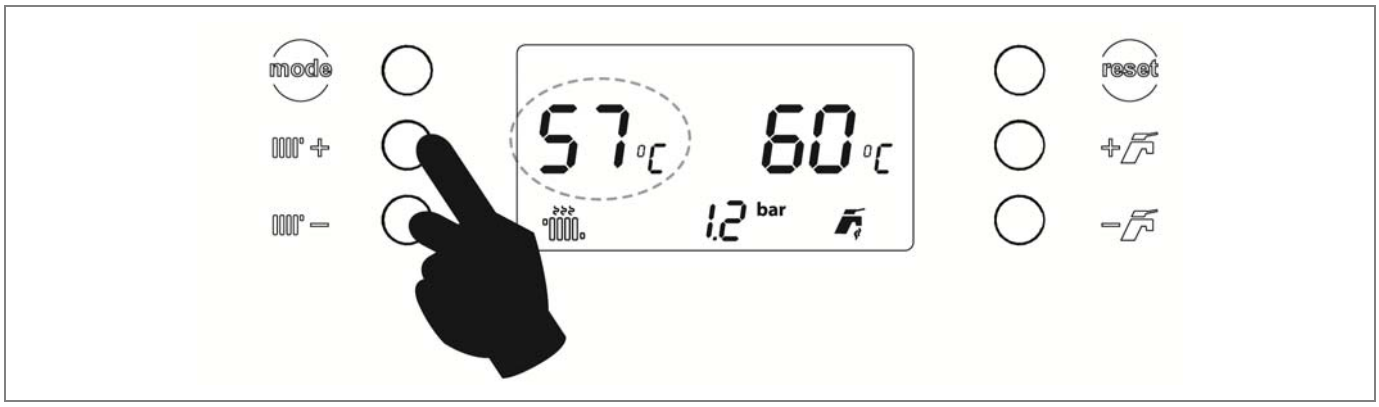
When the **digital display (32)** lights up, the screen will display the boiler model, the software version installed, and the type of gas selected.	
Then the boiler goes to **OFF** mode.	
Press and hold the **MODE** button to turn the boiler on and off.	

4.2 Selection of Winter Mode and Summer Mode

When the boiler is turned on from the off mode, the boiler enters the **Winter Mode** by default..

In the **Winter Mode** position, the boiler will provide heating and DHW service. The heating and DHW icons appear on the display.	
To disable the heating service, press the **MODE** symbol until the circle is completed.	
The boiler goes into the **Summer Mode** and only the DHW icon will be displayed. In this position, the boiler will only provide the DHW service.	

4.3 Selecting the boiler setpoint temperature



The **boiler temperature** setting is carried out using the heating temperature adjustment buttons (+ and −).

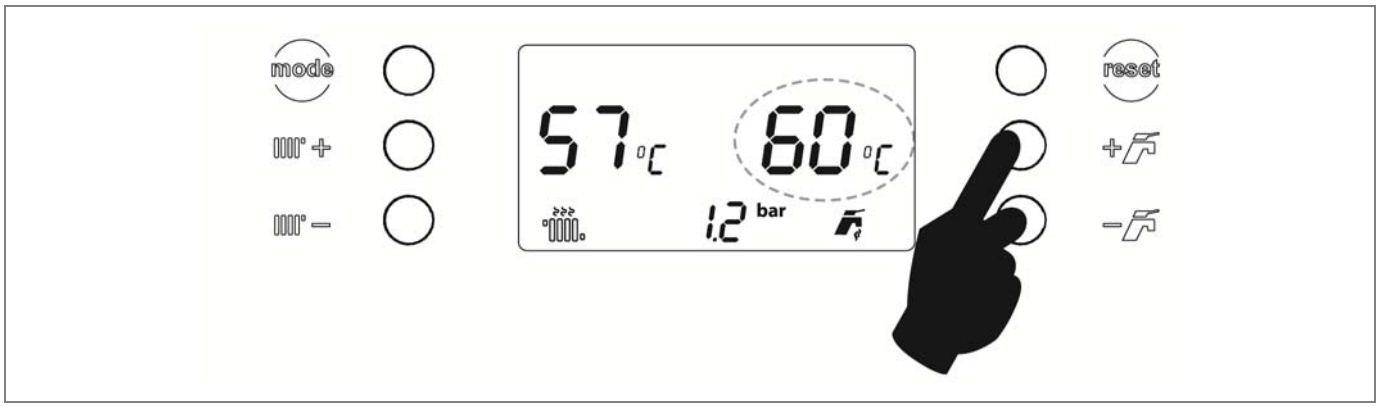
The temperature appears on the display with the boiler temperature indicator. The adjustment of the value is confirmed once the light of the screen is turned off.

As long as there is a direct circuit that is not operating depending on the external conditions (connected external probe), the desired operating temperature of the boiler can be selected.

The selectable boiler setpoint temperature range is 25-80ºC. The **Avanttia NG**boilers are condensing boilers. In order to obtain maximum boiler performance and energy savings, it is advisable to select a setpoint temperature of 60-70 ºC, providing this is permitted by the heating system installed and the insulation conditions of your home.

In addition, the maximum boiler temperature can be limited to 47ºC through parameter **P21**, activating the operation at low temperature.

4.4 Selection of the DHW temperature



The selection of the desired **DHW temperature** is carried out using the DHW temperature adjustment buttons. (+ and −).

The temperature appears on the display with the DHW temperature indicator. The adjustment of the value is confirmed once the light of the screen is turned off.

The selectable DHW temperature range is 10-60ºC.

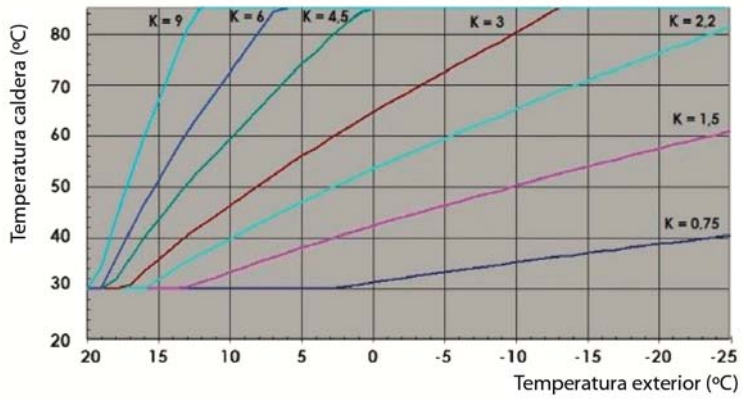
4.5 Operation with room thermostat (Optional)

The **Avanttia NG** boiler includes a connection prepared for the installation of a room chronothermostat or ambient room thermostat (see *"Connection of the room thermostat"*), which allows the management of the boiler's operation depending on the temperature inside your home. Optionally, **DOMUSA TEKNIK** offers a wide range of such devices in its product catalogue.

The installation of a room thermostat will optimise the installation's performance, adapting the heating and air conditioning to the requirements of your home and obtaining enhanced comfort. Additionally, if the thermostat allows the operating hours to be programmed (chronothermostat), it can adapt the system to the hours of use of the installation.

4.6 Operation according to exterior temperature conditions (Optional)

The official Technical Assistance Services of **DOMUSA TEKNIK** can install an exterior temperature probe (optional).
Thus, you can enable the automatic adjustment of the heating temperature so that it responds immediately to changes in the temperature of the exterior environment in a smart and comfortable manner. Thus, its operation will be more efficient and economical, as it will reduce the water temperature of the radiators when the exterior temperature rises and gradually increase the water temperature of the radiators when the exterior temperature drops. This will avoid having to make adjustments to the temperature of the radiators. This sensor is activated whenever it is connected, irrespective of the type and availability of the thermostats used.
When this operating mode is activated, the boiler and/or heating flow temperature are determined according to the K curve selected for the in parameter **P04** of the *"Technical Menu"* and the exterior temperature measured. If the installation is correctly dimensioned, the boiler temperature and/or flow temperature calculated will ensure the room temperature is in accordance with the set point programmed. The graph shows the temperature ratio for each point on the K curve.



Note **To connect the external sensor to the boiler, carefully follow the connection instructions provided in the "Electrical Connections" section.**

4.7 Operation with Open Therm remote control (Optional)

Optionally with the **Avanttia NG** boiler, **DOMUSA TEKNIK** offers a wide range of Open Therm remote controls, through which it is possible to command the operation of the boiler from any room in the home. The operation of the boiler is managed from this control, and the various temperatures and parameters selectable in it cannot be modified through the control panel of the boiler.

The remote control allows the programming of the desired comfort hours in the home, regulating the installation according to its needs by measuring the interior temperature and adjusting the temperature of the installation accordingly. The control can select the DHW and heating setpoint temperatures at any time, as well as displaying various operating parameters of the boiler. In turn, the control will warn of any malfunction of the boiler. When an exterior temperature probe is connected to the boiler, the remote control is able to regulate the comfort of the home depending on the weather conditions at any given moment, optimising the fuel consumption and comfort in the interior of the home.

For correct installation and functioning, carefully read the instructions enclosed with the remote control.

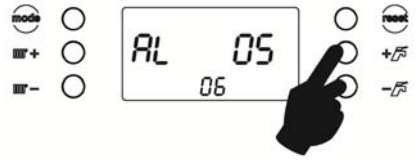
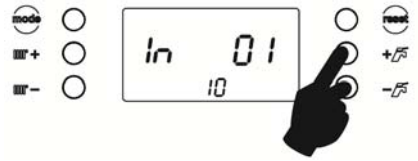
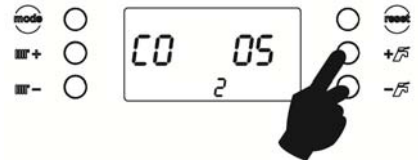
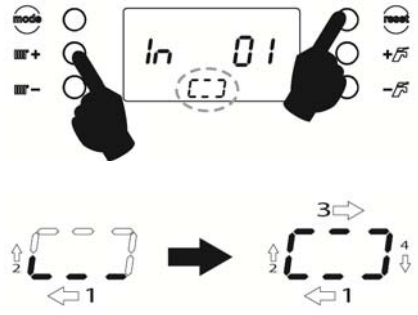
Note **To connect an Open Therm remote control to the boiler, please carefully follow the connection instructions in the section "Electrical Connections".**

5 MENU INFO

The *"Menu Info"* shows information and counters of the boiler on the digital screen at any time.

5.1 Access to *"Menu Info"*

Follow the instructions below to access the *"Menu Info"*.

	Press the buttons + and **RESET** simultaneously until the circle is completed.
	Navigate through the AL, In and Co parameters of the *"Info Menu"* with the DHW temperature adjustment buttons.
	**AL 0** – **AL 09**: Last 10 errors of the boiler.
	**In 0** – **In 10**: Information about the boiler.
	**Co 0** – **Co 06**: Boiler counters.
	To exit the *"Menu Info"*, press the buttons + and **RESET** simultaneously until the circle is completed.

5.2 "*Menu Info"* parameters

The following table shows the information and counters on the boiler status. The values shown on this menu cannot be modified.

No.	Parameter
AL 0 – AL 9	Last 10 errors of the boiler
In 1	Software version
In 2	External sensor temperature (*If there is an external sensor connected*) (ºC)
In 3	Heating sensor temperature (ºC)
In 4	Flue gas sensor temperature (ºC)
In 5	DHW sensor temperature (ºC)
In 6	Return sensor temperature (ºC)
In 7	Active boiler temperature setpoint (ºC)
In 8	Current power level (%)
In 9	*Reserved*
In 10	Water pressure sensor value (bar)
In 11	Current fan power (rpm x 100)
Co 1	Hours of boiler operation (h x 100)
Co 2	Hours of burner operation (h x 100)
Co 3	Number of burner ignitions (x 1000)
Co 4	Number of boiler alarms
Co 5	Number of activations of the *"Technical Menu"*
Co 6	Number of activations of the *"SAT Menu"*

6 ADDITIONAL FUNCTIONS

The **Avanttia NG** boiler includes the following additional control functions:

6.1 Burner anti-cycling functioning

Parameter **P05** is used to adjust the minimum interval between burner start-ups. It is used in installations with very low thermal inertia, to prevent excessively consecutive burner ignition and extinction cycles, ensuring smoother burner functioning and avoiding premature wear to the burner components.

6.2 Pump anti-block function

This function prevents the boiler circulation pumps from seizing up if they have been out of use for a long period. This system remains enabled while the boiler is plugged into the mains.

6.3 Anti-frost function

This function protects the boiler from freezing up during cold weather. The circulation pump will be activated when the boiler temperature drops below 7ºC. If the boiler temperature continues to drop and reaches 5 ºC, the burner will start up, heating the installation. This system remains on standby while the boiler is plugged into the mains. The activation temperature of the anti-frost protection can be modified through parameter **P38**..
During SHORT periods of absence, particularly in winter and in areas with a high risk of freezing weather, it is recommended NOT to disconnect the boiler from the electrical mains or the gas supply, in order to keep the anti-frost function active and prevent possible bursts due to the water in the pipes freezing.

6.4 Child protection

When this function is activated, the buttons are locked after 2 minutes have elapsed since their last use. When this function is enabled through parameter **P24**, the settings of the boiler can not be modified. The lock is deactivated by holding the **MODE** button until the cycle has finished.

P24 = 0: Child protection disabled **P24 = 1:** Child protection enabled

6.5 Boiler pressure sensor function

This function prevents boiler failure caused by a low water level and/or excess pressure in the boiler. The pressure is detected by a pressure sensor, and its value is displayed on the digital display (**49. Digital pressure gauge**). If the pressure drops below 0.05 MPa (0.5 bar), the electronic control switches off for the boiler and triggers an alarm on the display (**"E02"**). If the boiler pressure exceeds than 0.27 MPa (2.7 bar), an alarm is triggered on the display (**"E03"**), warning of excess pressure. In this case, it is advisable to contact the nearest **Technical Assistance Service** and proceed to emptying the boiler until the pressure is between 0.1 and 0.15 MPa (1 and 1.5 bar).

6.6 Anti-legionnaire function

Using the **P45** parameter, it is possible to activate the function of protection against Legionella bacterium. With the feature enabled, periodically, DHW tank temperature rises up to selected temperature.

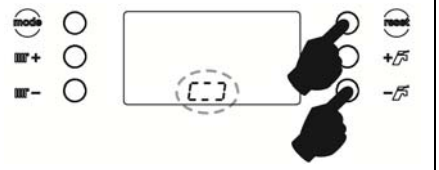
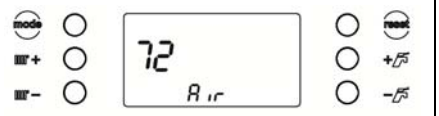
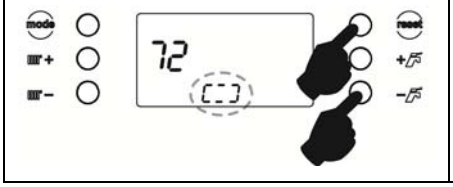
6.7 Air purge function

The air purge function is activated by pressing and holding the **RESET** buttons and − until the circle is completed while the boiler is OFF. After activation of this function, the pump and 3-way valve are activated and deactivated to drain the air from the installation.

WARNING

This procedure must be performed by authorised personnel of **DOMUSA TEKNIK**.

Make sure that the pressure in the boiler is adequate and that the automatic drain cover is open. If the water pressure decreases during the purge procedure, use the fill valve to fill the installation until the pressure is adequate.

	The boiler must be in the OFF mode to perform the purge procedure.
	Press **RESET** and − simultaneously to complete the circle and perform the purge procedure.
	The "Air" mode appears on the display. The boiler starts the purge function. During this procedure, the pump and 3-way valve are activated/deactivated to eliminate air from the hydraulic system. The purge function ends in 12 minutes.
	To exit the purge mode, wait for the 12 minutes of the function lasts or press **RESET** and − simultaneously until the circle is completed.

6.8 Connecting of the room thermostat

The boiler is ready to be connected to a room thermostat or chronothermostat. The thermostat cables should to be connected to terminals 1 and 2 of terminal strip **J1** by removing the electrical bridge originally supplied. (see *"Electrical Diagram"*).

6.9 Connecting the external sensor

The boiler is designed to work with an external temperature sensor. The cables of this sensor should be connected to terminals No. 5 and 6 of connection strip **J1**. (see *"Electrical Diagram"*).

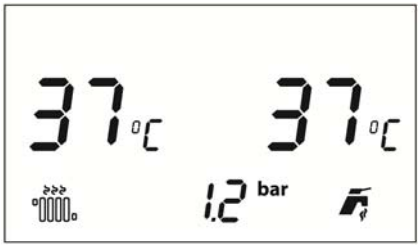
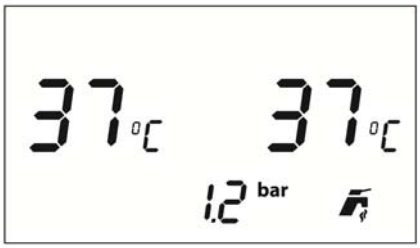
6.10 Connecting the Open Therm remote control

The boiler is designed to operate with an Open Therm remote control. The cables of this remote control should be connected to terminals No. 3 and 4 of connection strip **J1**. (see *"Electrical Diagram"*).

7 SHUTTING DOWN THE BOILER

In the **Off mode**, **while the boiler is plugged into the mains and connected to the fuel installation**, its heating and DHW functions will be switched off but the anti-frost protection and pump anti-block functions will remain activated.

As shown in the following sequence, to turn off the boiler, press the **MODE** button until the circle is completed once if the boiler is in **Summer Mode** or twice if the boiler is in **Winter Mode**..

	If the boiler is in **Winter Mode**, it will be necessary to press the **MODE** button twice.
	Press the **MODE** button until the circle is completed.
	The boiler goes into the **Summer Mode**.. When the boiler is in the **Summer Mode**, it is necessary to press the MODE button one more time.
	Press the **MODE** button until the circle is completed.
	The boiler goes into the off mode.

To shut down the boiler functioning completely, unplug it from the mains and cut off the fuel supply.

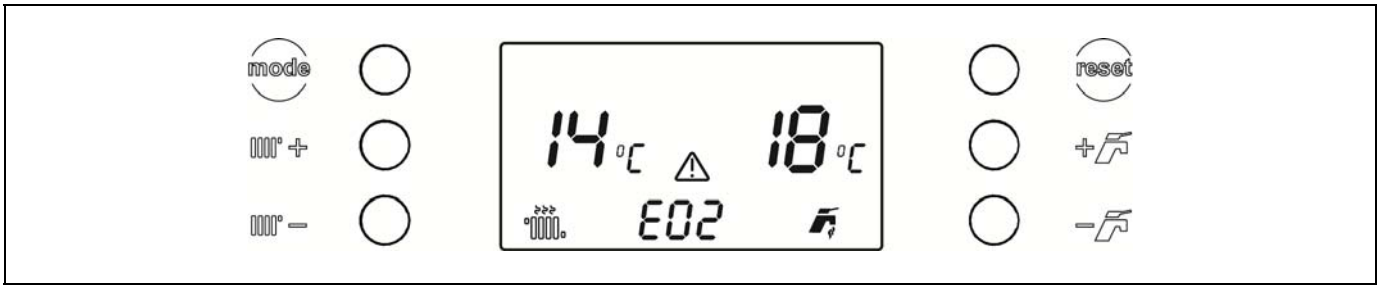
8 DRAINING THE BOILER

The water is drained from the boiler by opening the air drain valve ***(15)***, located inside the boiler on the lower left hand side of the heat exchanger. Connect a flexible tube to this valve and run it to a drain. After draining the boiler, close the valve again and remove the flexible tube.

Important **During the draining process, it is recommended to switch off the boiler and disconnect it from the mains.**

9 SAFETY INTERLOCKS

The boiler's electronic control system may activate the following safety interlocks to stop the boiler's operation. When any of these interlocks occurs, the boiler stops working and an interlock code appears on the display.



Important **If any of the following operating interlocks are repetitive, turn off the boiler and contact nearest official SAT..**

9.1 Temperature safety interlock

When this interlock occurs, the code **"E07"** and the error indicator symbol appear on the display. The burner will switch off and stop heating the installation.
This occurs when the boiler exceeds a temperature of 100ºC. To unlock it, wait until the boiler temperature drops to 85ºC and press the **RESET** button..

9.2 Burner interlock

When this interlock occurs, the code **"E06"** and the error indicator symbol appear on the display. The burner will switch off and stop heating the installation.
This occurs as a result of an anomaly in the burner or in the fuel installation. To unlock, press the **RESET** button..

9.3 Low pressure interlock

When this interlock occurs, the code **"E02"** and the error indicator symbol appear on the display. The burner and the boiler circulation pump will switch off, cutting off the heating and water flow to the installation.
This occurs when the boiler pressure drops to below 0.05 MPa (0.5 bar), preventing the boiler from functioning when the water is drained from the installation, due to either leakage or maintenance operations. To unlock, press the **RESET** button..

10 BOILER MAINTENANCE

To maintain the boiler in perfect working order, a yearly service should be performed by personnel authorised by DOMUSA TEKNIK..

Boiler and flue maintenance

The most important aspects to be checked are as follows:

The water pressure in the heating installation, **when the water is cold**, must be between 0.1 and 0.15 MPa (1 and 1.5 bar). If it is not between these values, it must be filled until they are reached.

The control and safety devices (thermostats, gas valve, etc.) must operate correctly.

The burner and the inside of the boiler chamber must be clean. Soft brushes or compressed air are recommended for cleaning the boiler, to prevent damage. **Do not use chemical products.**.

The expansion vessel must be full, in accordance with the specifications on the vessel plate.

Check the gas and water installations are completely sealed.

The flues must be free of any obstacles and have no leaks.

The gas flow must remain between the values indicated on the ***Technical Data Sheet***..

The circulating pumps and mixer valves (if the boiler is equipped with these) must not be blocked.

Cleaning the boiler

The boiler does not require any special maintenance. A **yearly cleaning procedure** at the end of the heating season will be sufficient. **The boiler chamber and burner should not be cleaned using chemical products or steel brushes.** After any cleaning operation has been carried out, it is important to run several ignition cycles to check all the elements are operating correctly.

After checking the boiler is functioning correctly, ensure there are no leaks.

Draining the condensation water

The boiler condensation water drain outlet should not be altered in any way and it must be kept free of obstructions. It is advisable to perform an annual cleaning procedure of the condensation collection siphon.

If a neutralisation system is installed at the condensation drain outlet, it should undergo periodical maintenance, in accordance with the manufacturer's instructions.

Cleaning products

Never use chemical products to clean the boiler. A plastic brush is sufficient, if the cleaning is carried out annually.

The cleaning of the boiler and hydraulic circuit will have lasting effects if water with a hardness of over 25ºF is treated previously. For softer water no treatment is required. In any case, a descaling pump should be used to carry out the descaling process.

Anti-frost protection

The **Avanttia NG** boiler has a function for preventing frost damage to the installation. This will function as long as the appliance remains plugged into the mains. Despite this function, and particularly in areas with very cold weather, we recommend taking precautions in order to prevent damage to the boiler. It is advisable to add anti-freeze to the water in the heating circuit. If the boiler is to be out of use for long periods of time, we recommend **draining all the water from the boiler**..

Boiler water characteristics

In areas with water hardness of over 25-30ºF, treated water must be used in the heating installation to avoid any scale deposits on the boiler.

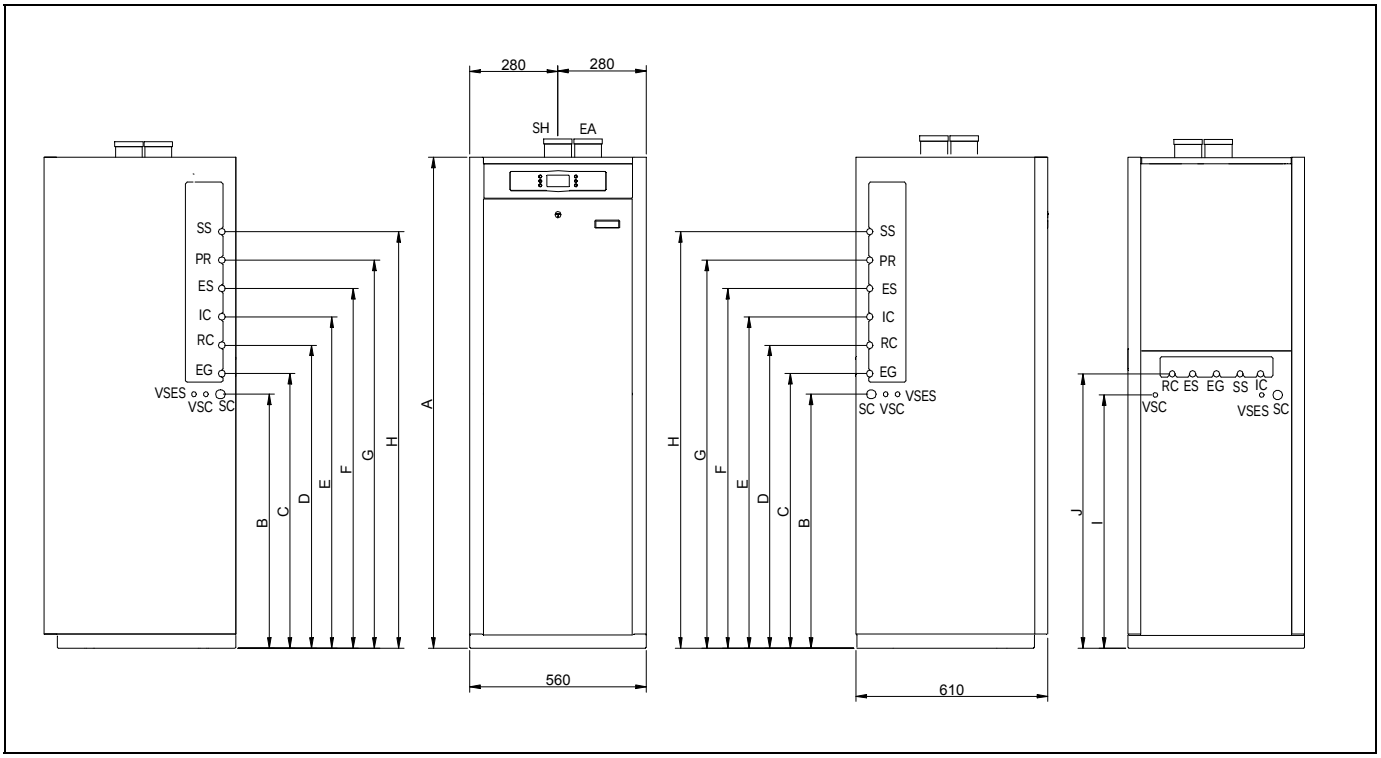
It should be noted that even a few millimetres of scale will greatly reduce the boiler's heat conductivity, causing a major drop in performance.

Treated water must be used in the heating circuit in the following cases:

- Very large circuits (containing a large amount of water).
- Frequent filling of the installation.

If repeated partial or total draining of the installation is necessary, we recommend filling it with treated water.

11 DIAGRAMS AND MEASUREMENTS



	Connection
IC: Direct circuit heating flow.	3/4" M
RC: Direct circuit heating return.	3/4" M
EG: Gas inlet.	3/4" M
ES: Domestic cold water intake.	3/4" M
PR: DHW recirculation	3/4" M
SS: Domestic hot water outlet.	3/4" M
VSES: DHW safety valve	-
VSC: Heating safety valve.	-
VC: Condensation outlet.	-
SH: Flue gas outlet	Ø80
EA: Air inlet	Ø80

	A	B	C	D	E	F	G	H	I	J
Avanttia NG 24 HDX 120 L	1555	805	870	960	1050	1140	1230	1320	805	870
Avanttia NG 24 HDX 150 L	1725	975	1040	1130	1220	1310	1400	1490	975	1040
Avanttia NG 28 HDX 150 L	1725	975	1040	1130	1220	1310	1400	1490	975	1040
Avanttia NG 33 HDX 150 L	1725	975	1040	1140	1220	1310	1400	1490	975	1040

*Dimensions in mm

12 TECHNICAL CHARACTERISTICS

12.1 Technical specifications

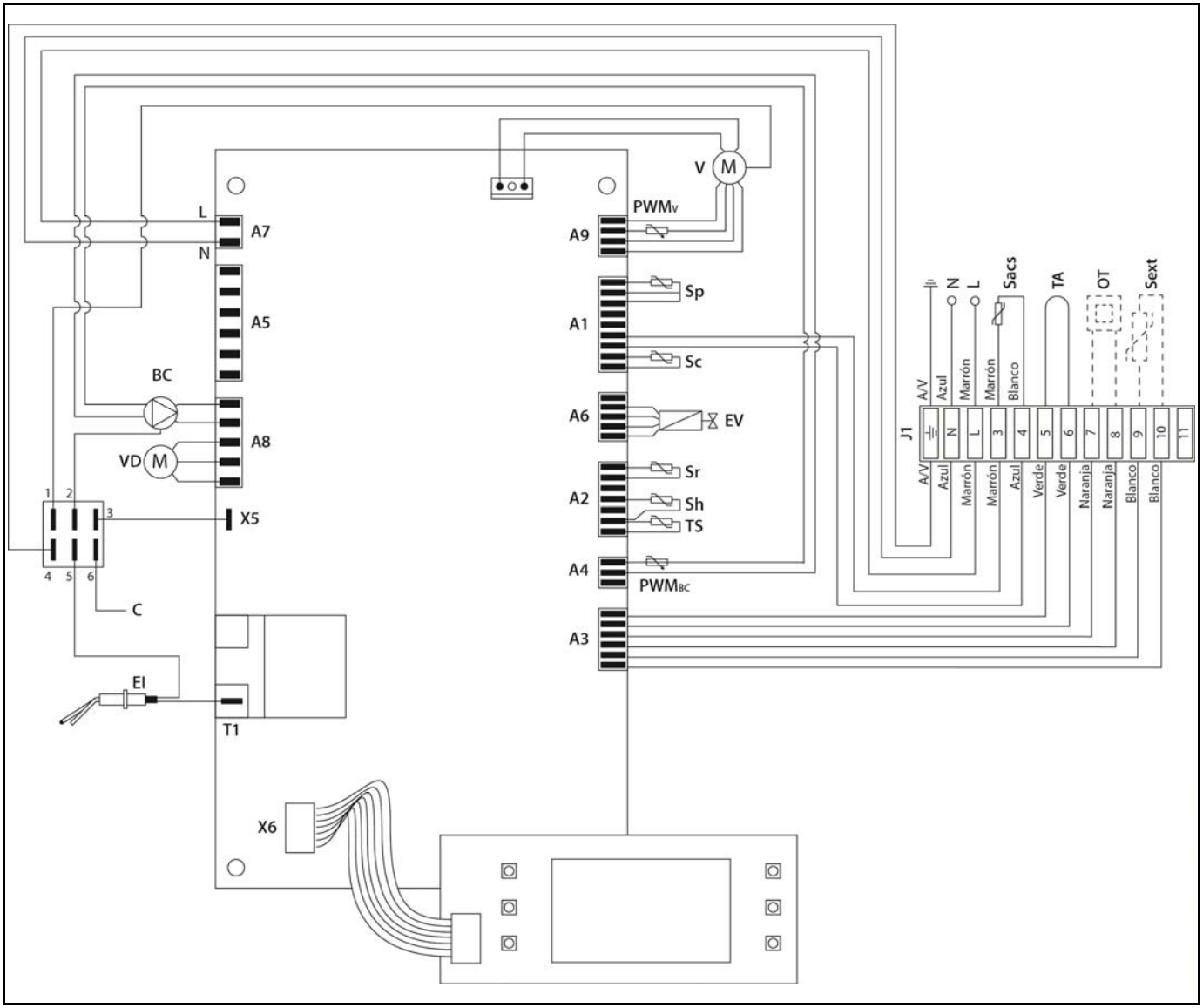
AVANTTIA NG	Unit	24 HDX 120 L			24 HDX 150 L			28 HDX 150 L			33 HDX 150 L		
Code		D9.24.HDX120			D9.24.HDX150			D9.28.HDX150			D9.33.HDX150		
Boiler type		Condensing Heating and hot water production											
Gas Circuit													
Gas Type		G20	G25	G31	G20	G25	G31	G20	G25	G31	G20	G25	G31
Gas Supply Pressure	mbar	20	25	37	20	25	37	20	25	37	20	25	37
Gas Consumption at Maximum	m³/h	2,49	2,83	0,96	2,49	2,83	0,96	2,95	3,32	1,11	3,52	3,93	1,30
Gas Consumption at Minimum	m³/h	0,36	0,43	0,14	0,36	0,43	0,14	0,38	0,45	0,14	0,41	0,474	0,15
Modulation Range		1:10			1:10			1:10			1:10		
Efficiency													
Gas Type		G20	G25	G31	G20	G25	G31	G20	G25	G31	G20	G25	G31
(80/60 °C) Efficiency at Maximum Heat Output	%	97,69	97,36	97,57	97,69	97,36	97,57	97,55	97,42	97,47	97,37	97,49	97,35
(50/30 °C) Efficiency at Maximum Heat Output	%	105,15	105,45	103,01	105,15	105,45	103,01	105,15	105,34	102,79	105,14	105,21	102,51
Efficiency at 30% load at 36/30 °C	%	108,0	107,7	105,81	108,0	107,7	105,81	107,75	107,64	105,32	107,43	107,56	104,7
Seasonal Space Heating Energy Efficiency (η_s)	%	92 (A)	92 (A)	91 (A)	92 (A)	92 (A)	91 (A)	92 (A)	92 (A)	91 (A)	92 (A)	92 (A)	91 (A)
Heating Circuit													
Gas Type		G20	G25	G31	G20	G25	G31	G20	G25	G31	G20	G25	G31
Maximum Heat Input (Qn) (PCI)	kW	24,3	24,3	24,3	24,3	24,3	24,3	28,7	28,7	28,7	33,9	33,9	33,9
Minimum Heat Input (Qn) (PCI)	kW	3,5	3,5	3,5	3,5	3,5	3,5	3,7	3,7	3,7	4	4	4
Maximum Heat Output (80/60 °C) (Pn)	kW	23,7	23,7	23,7	23,7	23,7	23,7	28	28	28	33	33	33
Minimum Heat Output (80/60 °C) (Pn)	kW	3,2	3,2	3,2	3,2	3,2	3,2	3,5	3,5	3,5	3,8	3,8	3,8
Maximum Heat Output (50/30 °C)	kW	25,3	25,3	25,0	25,3	25,3	25,0	30,1	30,2	29,5	35,6	35,6	34,7
Minimum Heat Output (50/30 °C)	kW	3,6	3,6	3,5	3,6	3,6	3,5	3,8	3,8	3,7	4,2	4,1	3,9
Temperature Selection Range (Heating)	ºC	25-80			25-80			25-80			25-80		
Operating Pressure (Maximum) (PMS)	bar	3			3			3			3		
Operating Pressure (Minimum)	bar	0,5			0,5			0,5			0,5		
Expansion Tank Useful Volume	L	8			8			12			12		

Avanttia NG

AVANTTIA NG	Unit	24 HDX 120 L			24 HDX 150 L			28 HDX 150 L			33 HDX 150 L		
Code		D9.24.HDX120			D9.24.HDX150			D9.28.HDX150			D9.33.HDX150		
Domestic Hot Water Circuit													
Maximum DHW Heat Input	kW	28,8	28,8	27,7	31.1	31.1	31.1	33,4	33,4	32,6	33,4	33,4	32,6
Minimum DHW Heat Input	kW	3,5	3,5	3,5	3,5	3,5	3,5	3,7	3,7	3,7	4	4	4
Tank capacity	l	120			150			150			150		
Maximum Water Pressure	bar	7			7			7			7		
Temperature Adjustment Range	ºC	10-65			10-65			10-65			10-65		
Electricity Circuit													
Electricity Supply		230 V +%10; -%15			230 V +%10; -%15			230 V +%10; -%15			230 V +%10; -%15		
Electricity Consumption (Max./Min.)	watt	95/55			95/55			104/60			115/65		
Protection index		IP20			IP20			IP20			IP20		
Exhaust Gas Circuit													
Gas Type		G20	G25	G31	G20	G25	G31	G20	G25	G31	G20	G25	G31
Maximum flue Temperature	ºC	78			78			78			78		
Overheat securty flue Temperature	ºC	100			100			100			100		
NOx		6			6			6			6		
Weighted Value of Nox	mg/kWh	40	44	46	40	44	46	43	41	50	46	37	56
Flue Mass Flow Rate (60/80°C - Qn) Nominal/Minimum	g/s	10,32 /1,6	10,78 /1,62	9,91/ 1,18	10,32 /1,6	10,78 /1,62	9,91/ 1,18	11,96 /1,78	12,21 /1,79	11,73 /1,54	14,0 /2,0	14,0 /2,0	14,0 /2,0
Flue Mass Flow Rate DHW (60/80 ºC-Qn) (Nominal/Minimum)	g/s	14,01	14,04	12,71	14,01	14,04	12,71	14,0	14,0	14,0	14,0	14,0	14,0
General													
Dimensions	mm	560 x 610 x 1565			560 x 610 x 1725			560 x 610 x 1725			560 x 610 x 1725		
Net Weight	Kg.	170			180			180			180		
Type		B23, B23P, B33, C13, C33, C53, C63, C83, C93			B23, B23P, B33, C13, C33, C53, C63, C83, C93			B23, B23P, B33, C13, C33, C53, C63, C83, C93			B23, B23P, B33, C13, C33, C53, C63, C83, C93		
Category		I2H, I2E+, I2E, I2E (S), I2L, I3P, II2H3P, II2L3P, II2E+3P			I2H, I2E+, I2E, I2E (S), I2L, I3P, II2H3P, II2L3P, II2E+3P			I2H, I2E+, I2E, I2E (S), I2L, I3P, II2H3P, II2L3P, II2E+3P			I2H, I2E+, I2E, I2E (S), I2L, I3P, II2H3P, II2L3P, II2E+3P		

13 ELECTRICAL DIAGRAM

13.1 Avanttia NG HDX



L: Live.

N: Neutral.

V: Fan.

BC: Circulation pump.

VD: Diverter valve.

C: Boiler ground connection.

EI: Ionisation electrode.

PWM_V: Fan PWM cable.

Sp: Water pressure sensor.

Sacs: DHW sensor.

Sc: Heating sensor.

EV: Gas valve.

Sr: Return sensor.

Sh: Flue gas sensor.

TS: Safety thermostat.

PWM_{BC}: Circulation pump PWM cable.

TA: Room thermostat.

OT: Open therm.

Sext: External sensor.

14 ALARM CODES

The **Avanttia NG** boiler has an electronic circuit which performs continuous self-testing to detect any malfunctioning in the boiler. When the electronic control detects malfunctioning, this is indicated by an alarm code flashing on the digital display. The table below shows a list of the alarm codes that may appear:

Code	Cause	Solution
E 02	Low water pressure	Increase pressure through the drain valve Contact SAT if the error persists
E 03	High water pressure	Reduce pressure through the drain valve Contact SAT if the error persists
E 04	DHW temperature sensor failure	Press RESET. Contact SAT if the error persists
E 05	Heating flow sensor failure	Press RESET. Contact SAT if the error persists
E 06	Ignition failure	Press RESET. Contact SAT if the error persists
E 07	Safety thermostat error	Press RESET. Contact SAT if the error persists
E 08	False flame error	Press RESET. Contact SAT if the error persists
E 09	Water circulation failure	Press RESET. Contact SAT if the error persists
E 11	Gas valve modulator failure	Press RESET. Contact SAT if the error persists
E 13	Flue gas outlet overheating	Press RESET. Contact SAT if the error persists
E 14	Flue gas temperature sensor failure	Press RESET. Contact SAT if the error persists
E 15	Fan error	Press RESET. Contact SAT if the error persists
E 16	Heating return sensor failure	Press RESET. Contact SAT if the error persists
E 17	Difference in heating sensor temperature	Press RESET. Contact SAT if the error persists
E 20	Excess of heating temperature	Press RESET. Contact SAT if the error persists
E 21	Difference between outlet and inlet temperature > TSP 82ºC	Press RESET. Contact SAT if the error persists
E 28	Maximum number of unlocks reached	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 37	Insufficient mains voltage error	The error disappears when the mains voltage is appropriate. Contact SAT if the error persists.
E 40	Electric frequency fluctuation	The error disappears when the electrical frequency is appropriate. Contact SAT if the error persists.
E 41	Flame error after 6 ignitions	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 42	Panel button failure.	Press RESET. Contact SAT if the error persists.
E 43	Open therm communication error	Press RESET. Contact SAT if the error persists.
E 44	Error for excess valve opening time without flame.	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 62	Adjustment error.	Adjust the boiler's gas valve. Press RESET. Contact SAT if the error persists
E 72	ΔT error due to ignition failure	Contact SAT

Code	Cause	Solution
E 77	Absolut current values reached	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 78	Maximum adjustment values reached	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 79	Minimum adjustment values reached	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 80	Gas valve error	Disconnect the boiler from the mains, connect and press RESET. Contact SAT if the error persists.
E 81	First attempt ignition error	Press RESET. Contact SAT if the error persists.
E 84	Gas inlet pressure error.	Press RESET. Contact SAT if the error persists.
E 87	Gas valve circuit problem	Press RESET. Contact SAT if the error persists.
E 88	Gas valve management error	Press RESET. Contact SAT if the error persists.
E 89	Combustion signal problem	Press RESET. Contact SAT if the error persists.
E 90	Impossibility to adjust combustion	Press RESET. Contact SAT if the error persists.
E 92	Air compensation active	Press RESET. Contact SAT if the error persists.
E 93	Impossibility to adjust combustion (temporarily)	Press RESET. Contact SAT if the error persists.
E 94	Low gas pressure or recirculation of gas	Press RESET. Contact SAT if the error persists.
E 95	Intermittent combustion values	Press RESET. Contact SAT if the error persists.
E 96	Gas inlet or outlet obstruction	Press RESET. Contact SAT if the error persists.
E 98	Software error	Install the boiler software. Press RESET. Contact SAT if the error persists.
E 99	General error	Press RESET. Contact SAT if the error persists.

Note **It will be very useful for the technical assistance service if you can inform them about the alarm code that has appeared on the call-out.**

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